Component of Statistics Canada Catalogue no. 82-003-X
Health Reports

Article

Waiting time for medical specialist consultations in Canada, 2007

by Gisèle Carrière and Claudia Sanmartin

April 2010

Statistics Canada Statistique Canada

Canada

Waiting time for medical specialist consultations in Canada, 2007

by Gisèle Carrière and Claudia Sanmartin

Abstract

Background
Waiting for specialist consultations can represent a substantial component of overall waiting time in the continuum of care. However, relatively little is known about the factors associated with how long patients wait for an initial specialist consultation.

Data and methods
The analysis is based on a subsample of 5,515 respondents aged 15 or older to the 2007 Canadian Community Health Survey who had consulted a specialist about a new condition in the previous 12 months and reported a waiting time. Multivariate logistic regression models were used to identify patient- and provider-related factors associated with waiting time.

Results
Female patients were less likely than male patients to see a specialist within a month. The nature of the new condition and the source of referral were significantly associated with waiting time. Compared with those referred by a family physician, patients referred by another specialist or a health care provider other than a physician, or who did not require a referral, were more likely to have a shorter waiting time. For men, but not women, household income and immigrant status were associated with waiting time.

Interpretation
This analysis suggests that factors beyond medical need are associated with how long patients wait to see a specialist. More research could usefully explore decision-making and communication processes between primary care physicians and specialists to better understand how urgency is assessed, how patients are triaged for specialist consultations, and how these patterns differ among various groups of patients.

Keywords
access to care, specialists, immigrant, socio-economic

Authors
Gisèle Carrière (1-604-666-5907; Gisele.Carriere@statcan.gc.ca) is with the Health Analysis Division at Statistics Canada; she is based in Vancouver, British Columbia. Claudia Sanmartin (1-613-951-6059; Claudia.Sanmartin@statcan.gc.ca) is with the Health Analysis Division at Statistics Canada, Ottawa, Ontario, K1A 0T6.

Accessibility is fundamental to the quality of health care. In Canada, waiting time has been identified as a key measure of access and the major barrier among those who experienced difficulties obtaining care.[1,2] In 2005, approximately 20% of Canadians reported adverse effects as a result of waiting for health care, including worry and stress and pain.[2]

Recently, numerous initiatives across Canada have endeavored to reduce waiting time for specialized health services,[1,3-5] particularly for non-emergency procedures in five priority areas identified in the 2004 Health Accord.[6] While waiting times for surgery and other procedures can be a significant barrier to care, they represent only one of the waiting periods experienced across the continuum of care.[7] Interest is now shifting "upstream" toward waits that occur earlier in the delivery of health care, including waiting for specialist consultations, which can account for a significant component of overall waiting time. For example, in 2005, among Canadians who had had a joint replacement, waits for an initial orthopedic specialist consultation made up nearly 30% of total waiting time.[5]

Despite growing interest in access to specialists, little is known about patient- and provider-related factors associated with shorter versus longer waiting times for initial consultations. Access to specialists, like other types of health care services, may be associated with a range of factors.[8] Patients' socio-economic characteristics have been related to the *use* of specialist services,[9-13] but it is not known if these characteristics are also associated with *waiting time* for specialist consultations. Provider-related variables,[13,14] including physicians' decision processes in assessing urgency,[15] have also been related to who gets referred to specialists. But again, it is unclear if these factors are associated with how long patients wait.

Based on information from the 2007 Canadian Community Health Survey, this study examines associations between patient- and provider-related factors and the length of time patients wait to consult a specialist about a new illness or condition.

Methods

Data source

The data are from a subsample of respondents aged 15 or older in the 10 provinces, to whom the "Access to Care" and "Waiting Times" modules of the 2007 Canadian Community Health Survey were administered. These modules, formerly the Health Services Access Survey, were incorporated into the Canadian Community Health Survey in 2003.

The survey response rate was 75.7%. Residents of institutions, the three territories, Indian reserves, Crown lands and certain remote regions and full-time members of the Canadian Forces were excluded from the survey. Proxy responses were not permitted. Since respondents in this analysis are a subsample, the multiple sample frames of the parent survey apply. More information about the Canadian Community Health Survey is available in other reports[16,17] and on Statistics Canada's website: http://www.statcan.gc.ca/cgibin/imdb/p2SV.pl?Function=getSurvey&SDDS=3226&lang=en&db=imdb&adm=8&dis=2).

The study pertains to 5,515 respondents who reported that they had consulted a specialist about a new illness or health condition in the previous 12 months and who reported a waiting time.

Analytical techniques

Factors associated with waiting times for specialist consultations were determined with multivariate logistic regression analyses in total cohort and sex-specific models. The outcome of interest was waiting time for the initial specialist consultation, expressed as a dichotomous variable, indicating whether patients waited: 1) less than one month, or 2) longer. This cut-off was chosen based on the median waiting time (4.3 weeks). To account for the complex survey design, standard errors, coefficients of variation and 95% confidence intervals were estimated using the bootstrap technique.[18,19] Differences between estimates were tested for statistical significance, established at the level of $p<0.05$.

The patient-related factors hypothesized to be associated with waiting time for a specialist consultation were sex, age, education, household income, immigrant status and rural/urban residence.

Immigrants were defined as respondents who were born outside of Canada and were not Canadian citizens by birth. They were categorized according to their duration of residence in Canada: less than 10 years, or 10 or more years before the survey date.

Based on a national distribution of total household income (adjusted for household size), respondents were classified into household income quintiles.

Education is the highest level of personal educational attainment.

Waiting time for an initial specialist consultation has been shown to be related to the nature of the underlying health condition.[5] Therefore, adjustment was made for the type of new condition reported and the presence of chronic conditions. The chronic conditions were asthma, arthritis, cancer, diabetes, chronic obstructive pulmonary disease, heart disease, and mood disorders (depression, bipolar disorder, mania and dysthymia).

People with chronic conditions, particularly those with multiple comorbidities, often experience poorer health. This may affect the severity of the condition for which they seek care, and in turn, waiting time. To partially adjust for this possibility, respondents were classified according to the number of selected chronic conditions they reported: none, one, or two or more. In addition, respondents were identified as having (or not having) high blood pressure.

Provider-related factors were represented by two variables: having a regular doctor and the source of the specialist referral (family doctor, another specialist, another health care provider, or did not require a referral).

The multivariate models initially included province of residence, but the results did not differ from those not adjusted for province. Therefore, because of the limited sample size, province was removed from the final models to preserve statistical power.

All independent variables in the models were tested for multicollinearity.

Results

Characteristics of patients consulting specialists

In 2007, an estimated 3 million patients aged 15 or older reported having consulted a specialist about a new condition in the previous year (Table 1). Almost 60% of these patients were female. More than half of the patients were aged 45 or older. Men consulting specialists were slightly older than women, averaging 50 years versus 47 years (data not shown). The educational attainment and household income of patients tended to be slightly higher than those of the population overall (data not shown). Approximately 20% were immigrants, just under three-quarters of whom had been in Canada more than a decade.

The top three conditions about which specialists were consulted were gynecological conditions (12%), heart/stroke (9%), and cancer (7%), though of course, this varied by sex. Fully 21% of the women had consulted a specialist about a new gynecological condition (data not shown). Men were more likely than women to have consulted a specialist because of a new heart condition/stroke (13% versus 7%).

Slightly fewer than half the patients also had at least one chronic condition, and 17% reported multiple comorbidities.

Most of the patients (91%) who had seen a specialist had a regular doctor. Over two-thirds (68%) of the patients had been referred to the specialist by their family doctor, 11% by another specialist, 12% by another health care provider, and 9% reported that they had not needed a referral. The most common sources of referral varied by province, especially in Quebec, where almost 20% of patients

Table 1
Characteristics of patients who consulted specialist about new condition, household population aged 15 or older, Canada excluding territories, 2007

	Sample count	Weighted estimate ('000)	Column (%)
Total aged 15 or older	**5,515**	**3,043**	**100.0**
Sex			
Male	2,035	1,226	40.3
Female	3,480	1,816	59.7
Age group			
15 to 34	1,138	746	24.5
35 to 44	877	588	19.3
45 to 64	2,099	1,148	37.7
65 or older	1,401	560	18.4
Education			
Less than secondary graduation	1,015	469	15.5
Secondary graduation	801	418	13.8
Some postsecondary	423	248	8.2
Postsecondary graduation	3,250	1,894	62.5
Household income quintile			
1 (lowest)	1,004	532	17.5
2	962	478	15.7
3	983	605	19.9
4	1,000	537	17.7
5 (highest)	984	580	19.1
Missing	582	311	10.2
Immigrant status			
Immigrant (0 to 10 years in Canada)	148	173	5.7
Immigrant (more than 10 years in Canada)	659	446	14.7
Canadian-born	4,688	2,412	79.6
Residence			
Urban core	3,290	2,179	71.6
Urban fringe	149	79	2.6
Urban area outside Census Metropolitan Area/ Census Agglomeration	427	130	4.3
Secondary urban core	60	46[E]	1.5[E]
Mix of urban and rural	815	254	8.3
Rural	774	355	11.7
New condition			
Gynecological condition	598	372	12.2
Heart condition/Stroke	530	279	9.2
Cancer	373	212	7.0
Skin condition	323	180	5.9
Cataract or other eye condition	320	164	5.4
Arthritis/Rheumatism	196	93	3.1
Mental health disorder	183	103	3.4
Asthma or other breathing condition	126	66	2.2
Other	2,852	1,567	51.5
High blood pressure[†]			
No	4,046	2,381	78.4
Yes	1,459	657	21.7
Number of selected chronic conditions[‡]			
None	2,603	1,602	53.2
One	1,775	903	30.0
2 or more	1,076	504	16.8
Has regular family doctor			
Yes	5,132	2,766	90.9
No	382	275	9.1
Source of specialist referral			
Family doctor	4,012	2,061	67.9
Other specialist	570	339	11.1
Other health care provider	571	372	12.2
Did not require referral	352	263	8.7

[†] excluded from count of chronic conditions
[‡] selected chronic conditions were asthma, arthritis, cancer, chronic obstructive pulmonary disease, diabetes, heart disease, mood disorders (depression, bipolar disorder, mania, dysthymia)
[E] use with caution (coefficient of variation 16.6% to 33.3%)

Notes: Estimates are based on population who completed initial consultation with medical specialist in previous 12 months and provided information about waiting time. Except for total household income, analyses exclude non-response ("don't know," "not stated," "refusal").

Source: 2007 Canadian Community Health Survey

reported that they had been referred by a health care provider who was not their family doctor or another specialist, and 17% had not required a referral (Table 2).

Distribution of waiting times

Nearly half (46%) of the patients had waited less than a month for their initial specialist consultation (Table 2). An additional 40% waited one to three months, and 14% waited more than three months. The percentage who saw the specialist within a month varied from 37% in Newfoundland and Labrador and Manitoba to 51% in Quebec. Just under half (49%) of those who required a consultation for a new mental health condition waited less than a month.

The length of the wait depended on the nature of the new condition. Not surprisingly, patients with potentially life-threatening illnesses were the most likely to have seen a specialist within a month. Almost 60% of those with a heart condition/stroke or cancer waited less than a month for their initial consultation, compared with 29% of those with arthritis/rheumatism (Table 3). Just under half (49%) of those who required a consultation for a new mental health condition waited less than a month.

Overall, 51% of male patients with a new condition waited less than a month for their initial consultation. However, 63% of men with a new heart condition/stroke saw a specialist within a month, as did 56% of those with cancer, 55% with eye conditions, and 52% with mental disorders.

Compared with men, a lower percentage (42%) of female patients had their first specialist consultation within a month. Again, the likelihood of a short wait varied with the condition. More than half of those with cancer (57%) or a heart condition/stroke (55%) had their first consultation within a month. On the other hand, relatively small percentages with gynecological conditions (39%), skin conditions (39%) or arthritis/rheumatism (25%) waited less than a month.

Table 2
Unadjusted percentage distribution of waiting times and of referral sources to consult specialist about new condition, by province, household population aged 15 or older, Canada excluding territories, 2007

			Waiting time				Referral source			
Province	Sample count	Weighted estimate	Less than 1 month	1 to 3 months	3 month or longer	Waited longer than median	Family doctor	Other specialist	Other health care provider	Did not require referral
	Number	000				%				
Total	**5,515**	**3,043**	**45.6**	**40.5**	**13.9**	**39.1**	**67.9**	**11.2**	**12.2**	**8.7**
Newfoundland and Labrador	217	49	37.0*	41.7	21.4*	49.3*	69.0	12.1[E]	11.0[E]	F
Prince Edward Island	173	13	44.6	44.3	11.1[E]	41.7	77.8*	8.8[E]	9.1[E]	F
Nova Scotia	322	99	47.6	37.6	14.8[E]	39.7	78.7*	10.2[E]	4.5[E]*	6.6[E]
New Brunswick	284	76	44.3	37.9	17.8[E]	45.2	73.6	8.8[E]	9.5[E]	8.1[E]
Quebec	520	711	51.0*	36.9	12.2	33.3*	46.2*	17.5*	19.8*	16.5*
Ontario	2,391	1,195	44.7	40.7	14.5	40.2	72.4*	10.2	11.0	6.4*
Manitoba	365	108	37.2*	48.8*	14.0[E]	47.2*	76.7*	6.8[E]*	9.2[E]	7.4[E]
Saskatchewan	363	81	46.3	38.8	15.0[E]	43.3	78.1*	10.8[E]	7.9[E]*	F
Alberta	403	314	41.8	45.9	12.4[E]	40.8	75.4*	8.1[E]	9.1[E]	7.4[E]
British Columbia	477	396	44.4	41.1	14.6	39.5	78.5*	7.1[E]*	9.5[E]	4.9[E]*

* significantly different from estimate for "rest of Canada" which represents all respondents not in province indicated ($p < 0.05$)
[E] use with caution (coefficient of variation 16.6% to 33.3%)
F too unreliable to be published (coefficient of variation greater than 33.3%)
Notes: Estimates are based on population who completed initial consultation with medical specialist in previous 12 months and provided information about waiting time. Analyses exclude non-response ("don't know," "not stated," and "refusal").
Source: 2007 Canadian Community Health Survey

Table 3
Unadjusted percentage distribution of waiting times to consult specialist about new condition, by nature of new condition, household population aged 15 or older, Canada excluding territories, 2007

	Waiting time			Less than 1 month	
New condition	Less than 1 month	1 to 3 months	3 month or longer	Males	Females
Total	**45.6**	**40.5**	**13.9**	**51.0**	**42.1**
Heart condition/Stroke†	59.3	33.3	7.4[E]	63.3	54.5
Cancer	56.8	30.5	12.7[E]	56.3	57.2
Mental health disorder	48.7	36.6	14.7[E]	51.5	47.2[E]
Cataract or other eye condition	46.4*	39.6	14.1[E]*	54.6	41.8
Asthma or other breathing condition	45.0*	45.6	9.5[E]	x	43.7[E]
Other	44.4*	41.7*	13.9*	48.7*	40.6*
Skin condition	42.2*	42.6	15.2[E]*	45.4*	39.0*
Gynecological condition	39.1*	46.3*	14.6*		39.1*
Arthritis/Rheumatism	28.9*	40.1	31.0*	x	24.6[E]*

† reference group
* significantly different from estimate for reference group ($p < 0.05$)
[E] use with caution (coefficient of variation 16.6% to 33.3%)
x suppressed to meet confidentiality requirements of *Statistics Act*
.. not applicable
Notes: Estimates are based on population who completed initial consultation with medical specialist in previous 12 months and provided information about waiting time. Analyses exclude non-response ("don't know," "not stated," and "refusal").
Source: 2007 Canadian Community Health Survey

Unadjusted bivariate results

Unadjusted analyses for the entire subsample suggest that, in addition to gender and the nature of the new condition, several other factors were associated with waiting time for specialist consultations (Table 4).

People with high blood pressure were less likely than those not afflicted to be seen within a month. Comparatively high percentages of patients without a regular medical doctor and those who were referred by someone other than a family doctor or who did not need a referral waited less than a month.

Unadjusted sex-specific analyses show that among female patients, waiting less than a month was significantly associated with only two variables: the nature of the new condition and referral source. However, among male patients, in addition to the nature of the condition and referral source, not having high blood pressure or a regular family doctor and being an immigrant were associated with waiting less than a month.

Multivariate logistic regression results

Results from the full model indicate that even when the influence of the other variables was controlled, female patients were significantly less likely than male patients to see a specialist in less than a month. And as expected, for both sexes, the nature of the new condition was significantly associated with waiting time: compared with those who had a new heart condition/stroke, the odds of seeing a specialist within a month were

Table 4
Unadjusted prevalence and adjusted odds ratios for waiting time less than 1 month to consult specialist, by selected characteristics and sex, household population aged 15 or older, Canada excluding territories, 2007

	Total					Males					Females				
	Unadjusted prevalence	95% confidence interval		Adjusted odds ratio	95% confidence interval	Unadjusted prevalence	95% confidence interval		Adjusted odds ratio	95% confidence interval	Unadjusted prevalence	95% confidence interval		Adjusted odds ratio	95% confidence interval
		from	to		from to		from	to		from to		from	to		from to
Total aged 15 or older	45.6	43.5	47.7	..	..	50.9	47.3	54.6	..	..	42.0	39.2	44.7	..	..
Sex															
Male†	51.0	47.3	54.6	1.0	..	..	..	..	..	..	..	..	..	..	..
Female	42.0*	39.2	44.7	0.8*	0.6 1.0	..	..	..	..	..	..	..	..	..	..
Age group															
15 to 34	47.3	42.7	51.9	..	..	55.8	46.9	64.7	..	..	43.1	38.0	48.2	..	..
35 to 44	45.5	40.0	50.9	..	..	49.9	40.8	59.0	..	..	42.4	36.2	48.6	..	..
45 to 64	43.4	40.1	46.7	..	..	48.7	43.2	54.1	..	..	40.0	35.4	44.1	..	..
65 or older†	47.9	43.6	52.2	..	..	51.4	44.9	58.0	..	..	44.6	39.1	50.1	..	..
Age modelled as continuous term	..	..	..	1.0	1.0 1.0	..	..	..	1.0	0.9 1.0	..	..	..	1.0	1.0 1.0
Age modelled as quadratic term	..	..	..	1.0	1.0 1.0	..	..	..	1.0	1.0 1.0	..	..	..	1.0	1.0 1.0
Education															
Less than secondary graduation	48.4	43.5	53.3	1.2	0.9 1.6	52.5	44.8	60.2	1.4	0.9 2.2	45.7	39.2	52.1	1.2	0.8 1.6
Secondary graduation	45.6	40.0	51.3	1.2	0.9 1.5	50.0	40.1	60.0	1.1	0.7 1.7	43.5	36.8	50.1	1.2	0.9 1.6
Some postsecondary	45.3	37.5	53.1	1.0	0.7 1.3	53.9	41.9	65.9	1.1	0.6 1.9	40.0	30.0	50.0	0.9	0.6 1.4
Postsecondary graduation†	44.8	42.0	47.5	1.0	.. ..	50.2	45.4	55.0	1.0	.. ..	40.8	37.3	44.3	1.0	.. ..
Household income quintile															
1 (lowest)	48.7	43.7	53.7	0.9	0.7 1.3	51.5	42.4	60.7	0.5*	0.3 0.9	47.5	41.2	53.7	1.4	0.9 2.1
2	47.6	42.8	52.5	0.9	0.7 1.3	54.5	45.9	63.0	0.7	0.4 1.2	43.9	37.6	50.3	1.2	0.8 1.8
3	46.7	41.7	51.7	0.9	0.7 1.3	51.1	43.0	59.3	0.7	0.4 1.1	43.2	36.7	49.7	1.3	0.9 1.9
4	41.3	36.8	45.8	0.8	0.6 1.1	44.9	38.2	51.5	0.6*	0.4 0.9	38.6	32.6	44.6	1.1	0.7 1.6
5 (highest)†	47.0	41.7	52.4	1.0	.. ..	54.8	46.8	62.8	1.0	.. ..	38.4	31.4	45.5	1.0	.. ..
Missing	39.7	33.2	46.3	0.8	0.5 1.1	45.8	35.2	56.3	0.6	0.3 1.1	36.8	29.1	44.6	0.9	0.6 1.5
Immigrant status															
Immigrant (0 to 10 years in Canada)	53.5	42.9	64.1	1.4	0.9 2.4	66.3*	51.1	81.4	2.1	0.9 4.6	44.0‡	29.6	58.5	1.2	0.6 2.4
Immigrant (more than 10 years in Canada)	49.6	43.7	55.5	1.4*	1.0 1.8	60.5*	51.7	69.3	2.0*	1.3 3.0	42.1	34.8	49.3	1.1	0.8 1.5
Canadian-born†	44.4	42.0	46.7	1.0	.. ..	48.1	44.1	52.0	1.0	.. ..	41.9	38.8	44.9	1.0	.. ..
Residence															
Urban core†	45.7	43.1	48.4	1.0	.. ..	52.1	47.9	56.4	1.0	.. ..	41.4	37.9	44.9	1.0	.. ..
Urban fringe	34.7	24.2	45.3	0.6	0.4 1.0	x	x	x	0.6	0.3 1.5	33.4‡	20.3	46.5	0.6	0.3 1.1
Urban area outside Census Metropolitan Area/ Census Agglomeration	49.3	40.2	58.3	1.3	0.9 1.9	51.9	39.4	64.4	1.4	0.7 2.5	47.7	36.0	59.4	1.4	0.9 2.2
Secondary urban core	52.7‡	28.0	77.5	1.5	0.5 4.3	x	x	x	1.4	0.2 9.1	x	x	x	1.6	0.6 3.9
Mix of urban and rural	44.0	38.6	49.3	1.1	0.8 1.4	47.8	39.0	56.6	1.1	0.7 1.7	41.8	35.3	48.2	1.1	0.8 1.5
Rural	45.9	40.0	51.7	1.1	0.8 1.4	47.9	38.1	57.7	1.0	0.6 1.4	44.3	36.9	51.7	1.2	0.9 1.7
New condition															
Heart condition/Stroke†	59.3	52.3	66.4	1.0	.. ..	63.3	54.4	72.3	1.0	.. ..	54.5	43.4	65.5	1.0	.. ..
Cancer	56.8	48.5	65.0	0.9	0.5 1.4	56.3	43.6	69.0	0.7	0.4 1.4	57.2	46.7	67.6	1.1	0.6 2.1
Skin condition	42.2*	33.4	51.0	0.5*	0.3 0.8	45.4*	32.0	58.7	0.4*	0.2 0.9	39.0*	28.3	49.7	0.5*	0.3 1.0
Cataract or other eye condition	46.4*	36.8	56.0	0.4*	0.3 0.7	54.6	40.0	69.3	0.5*	0.2 1.0	41.8	29.9	53.7	0.4*	0.2 0.8
Arthritis/Rheumatism	28.9*	20.3	37.5	0.3*	0.2 0.5	x	x	x	0.4*	0.2 0.9	24.6‡*	13.9	35.2	0.3*	0.1 0.5
Mental health disorder	48.7	37.0	60.3	0.7	0.4 1.1	51.5	36.4	66.7	0.6	0.2 1.4	47.2‡	31.5	63.0	0.7	0.3 1.4
Asthma or other breathing condition	45.0*	33.9	56.1	0.5*	0.3 0.8	x	x	x	0.4*	0.2 0.8	43.7‡	28.1	59.4	0.6	0.3 1.4
Gynecological condition	39.1*	32.7	45.5	0.4*	0.3 0.6	..	..	..	..	.. ..	39.1*	32.7	45.5	0.4*	0.3 0.8
Other	44.4*	41.5	47.3	0.5*	0.3 0.6	48.7*	44.1	53.4	0.5*	0.3 0.7	40.6*	36.9	44.3	0.5*	0.3 0.8
High blood pressure															
No†	46.8	44.3	49.3	1.0	.. ..	54.0	49.9	58.2	1.0	.. ..	42.1	38.9	45.2	1.0	.. ..
Yes	41.4*	37.4	45.5	0.7*	0.5 0.9	41.4*	35.0	47.8	0.6*	0.4 0.8	41.4	36.3	46.6	0.8	0.6 1.1
Number of selected chronic conditions§															
None†	46.9	43.9	50.0	1.0	.. ..	54.2	49.1	59.3	1.0	.. ..	41.7	37.9	45.5	1.0	.. ..
One	43.8	40.0	47.6	0.9	0.7 1.1	48.4	42.4	54.4	0.8	0.6 1.1	40.9	36.2	45.6	0.9	0.7 1.2
2 or more	45.3	40.6	50.0	0.9	0.7 1.1	44.5	36.2	52.8	0.7	0.5 1.2	45.8	39.9	51.7	1.0	0.7 1.4
Has regular family doctor															
Yes†	44.3	42.1	46.5	1.0	.. ..	48.5	44.8	52.3	1.0	.. ..	41.5	38.7	44.4	1.0	.. ..
No	58.9*	51.0	66.8	1.2	0.8 1.7	69.2*	58.4	80.0	1.6	1.0 2.7	47.3	36.6	58.1	0.9	0.5 1.4
Source of specialist referral															
Family doctor†	38.9	36.5	41.3	1.0	.. ..	43.5	39.4	47.6	1.0	.. ..	35.9	32.9	38.9	1.0	.. ..
Other specialist	52.3*	45.1	59.5	1.7*	1.3 2.4	58.3*	45.7	70.9	1.7*	1.0 2.8	48.2*	40.1	56.3	1.6*	1.1 2.3
Other health care provider	58.7*	52.4	65.0	2.2*	1.7 3.0	62.4*	53.0	71.8	2.0*	1.3 3.1	55.7*	47.0	64.4	2.5*	1.7 3.7
Did not require referral	71.6*	63.9	79.3	4.1*	2.8 6.0	79.7*	69.6	89.9	5.4*	2.9 10.0	65.7*	55.1	76.4	3.8*	2.4 6.1

† reference group
§ selected chronic conditions were asthma, arthritis, cancer, chronic obstructive pulmonary disease, diabetes, heart disease and mood disorders (depression, bipolar disorder, mania, dysthymia)
* significantly different from estimate for reference category, denoted by † ($p < 0.05$)
‡ use with caution (coefficient of variation 16.6% to 33.3%)
x suppressed to meet confidentiality requirements of *Statistics Act*
.. not applicable

Notes: Estimates are based on population who completed initial consultation with specialist in previous 12 months and provided information about waiting time. Except for total household income, analyses exclude non-response ("don't know," "not stated," and "refusal"). Modelled odds ratio results for total cohort model are based on information from 5,397 respondents (1,982 male model; 3,415 female model).

Source: 2007 Canadian Community Health Survey.

What is already known on this subject?

- Waiting time for an initial consultation with a specialist can constitute a substantial part of the continuum of care.
- Little known about factors associated with waiting time for specialist consultations.

What does this study add?

- This study identifies factors associated with shorter versus longer waiting times for specialist consultations.
- As might be expected, the nature of the health condition prompting the consultation was significantly associated with how long patients waited.
- Women tended to wait longer than men.
- For both sexes, waiting time varied significantly depending on the source of referral.
- For men only, household income and immigrant status were significant factors in waiting time.

significantly lower for men and women with skin and eye conditions and arthritis/rheumatism. As well, men with asthma or other breathing conditions and women with gynecological conditions had lower odds of consulting a specialist within a month.

The sex-specific multivariate results also confirm the importance of referral source in waiting times for both male and female patients. Compared with patients referred by their family doctor, those referred by another specialist or another health care provider had about twice the odds of seeing a specialist within a month. And among patients who indicated no referral was required, the odds of seeing a specialist within a month were five times higher for men and almost four times higher for women, compared with those referred by their family doctor.

For men, but not women, several other factors were significantly associated with waiting time to see a specialist. Among male patients, the odds of seeing a specialist within a month were twice as high for those who had immigrated more than 10 years earlier than for those who were Canadian-born. As well, male patients reporting high blood pressure had significantly low odds of seeing a specialist within a month, compared with those without high blood pressure. Household income was also significant for male patients. Compared with men in the top income quintile, those in the lowest were less likely to see a specialist within a month. Yet this was also true for men in the second-highest quintile.

Discussion

This national study identifies patient- and provider-related factors associated with waiting time for an initial specialist consultation about a new condition. Not surprisingly, waiting time varied with the nature of that condition, with generally shorter waits for those that were potentially life-threatening. But even when the influence of this variable was taken into account, the results highlight significant differences in waiting times by sex, source of referral, and for male patients, household income and immigration status.

Women were significantly less likely than men to see a specialist within a month. This could result from systemic gender biases in access to health care services, evidence of which has previously been demonstrated. For example, gender differences in access to primary care for heart disease have been reported,[20-22] including physicians' diagnostic and management practices.[22] Differential access to specialized cardiovascular care based on non-clinical patient attributes, such as social status, has also been reported.[23]

However, the disparity between male and female patients in waiting time may reflect differences in the severity of the condition that prompted the specialist consultation. Because information about the patients' health status before the visit is limited, and no measure of the severity of the new condition is available, it was not possible to fully adjust for health status. It may be that men's shorter waiting time for specialist consultations was attributable to more advanced conditions. Men are less likely than women to use physician services or to have a regular family doctor,[12,24] and consequently, may have less continuity of primary care. As a result, men may present at more advanced stages of disease and require expedited specialist consultations.

Differences in specialist waiting time by immigration status among male patients could also reflect greater severity of the emergent health condition. This is consistent with well-known associations between immigration status and changes to health over time, as well as differences in the use of and access to care among the immigrant population. Immigrants tend to have lower health literacy,[25] which may contribute to less use of preventive care. For example, significantly lower rates of cancer screening have been found among visible minorities, a large proportion of whom are immigrants.[26] And although recent immigrants tend to be in better health than the Canadian-born population, over time they are more likely to report health deterioration.[27] Therefore, the differences among men in waiting time for specialist consultations by immigrant status may be attributable to medical need.

Finally, the results of this study demonstrate the importance of the referral source in specialist waiting time. There may be several explanations. First, the referral source may indicate the point at which a patient is located in the pathway of diagnosis and treatment. The question on the Canadian Community Health Survey pertained to waiting time for a specialist consultation in the previous 12 months, but the specific visit

about which the respondent answered might have resulted from prior visits to other specialists to confirm a diagnosis. This process may have yielded greater diagnostic certainty, and perhaps, influenced assessed urgency. General practitioners often use referrals to obtain assistance with diagnoses or advice about therapy.[28] Therefore, diagnostic uncertainty may be involved when a family physician is the referral source, and may affect assessed urgency. As well, suboptimal communication between general practitioners and specialists has been cited as a difficulty in the referral process.[29] Recently, referral tools have been developed to improve and standardize communications between general practitioners and specialists.[15]

Respondents who reported not needing a referral had much higher odds of seeing the specialist within a month, compared with those referred by a family doctor. To some extent, this may be attributable to provincial variations in how services are organized, especially in Quebec. Relatively high percentages of Quebec residents reported referral sources other than family doctors or self-referrals. According to recent data,[21] Quebec residents are less likely than people in other provinces to have a regular family doctor, and so may rely on nurses[30] or other health care professionals working in primary health care teams in community health centres. This, in turn, may facilitate referral to specialists.

Limitations

The distribution of waiting times reported to the Canadian Community Health Survey was skewed. To attempt to preserve the continuous nature of the data, a logarithmically transformed, continuous dependent variable using linear regression was employed. But because respondents could report waiting times in days, weeks or months, and because they tended to round responses, especially for longer waits, these models were difficult to fit. Consequently, a dichotomous outcome was derived, and logistic regression analyses were used.

The study is based on self-reported data that were not clinically validated and may be subject to recall bias.

As well, if respondents interpreted the question, "In the past 12 months, did you require a visit to the specialist for a diagnosis or consultation for a new illness or condition?" to mean that both the occurrence of the new illness and the consultation arose within the past 12 months, some respondents with long waiting times may not have been captured.

Clinical need is a crucial indicator of waiting time for health care services, so it was expected that those in greater need would wait less time for a specialist consultation. However, it was not possible to fully adjust for the need for services because information about the severity of the new or existing conditions is not available from these data.

Conclusion

Waiting time for specialist services represents a key indicator of access to health care in Canada. Data from the Canadian Community Health Survey provide a unique opportunity to explore factors associated with how long patients wait for specialist care.

The results of this study suggest that, in addition to the nature of the new condition, gender and referral source are associated with obtaining a consultation within a month. And for males, household income and immigration status are also significant.

This is only a preliminary examination of factors related to waiting time for specialist consultations; more research is obviously required. In particular, given the apparent importance of the source of referral, future analyses might focus on decision-making and communication processes to determine how urgency is assessed and how patients are triaged for specialist consultations. The findings from this and subsequent research may be relevant to a better understanding of the role of different health care providers in accessing specialists and how these processes vary across patient groups. ■

References

1. Sanmartin C, Houle C, Berthelot J-M, et al. *Access to Health Care Services in Canada, 2001* (Statistics Canada, Catalogue 82-575-XIE) Ottawa: Statistics Canada, 2002.
2. Sanmartin C, Berthelot J-M. *Access to Health Care Services in Canada, January to December 2005* (Statistics Canada, Catalogue 82-575-XIE) Ottawa: Statistics Canada, 2006.
3. Health Council of Canada. *Wading through Waiting Times – What Do Meaningful Reductions and Guarantees Mean? An Update on Waiting Times for Health Care, June 2007.* Available at: http://www.healthcouncilcanada.ca/docs/rpts/2007/Waiting_times/hcc_Waiting-times-update_200706_Final%20ENGLISH.pdf. Accessed February 26, 2008.
4. Canadian Institute for Health Information. *Waiting Time Tables - A Comparison by Province, 2008.* Available at: http://www.secure.cihi.ca/cihiweb/products/Final_Waiting_Times_AIB_EN_080229.pdf. Accessed March 16, 2008.
5. Canadian Institute for Health Information. *Waiting for Health Care in Canada: What We Know and What We Don't Know.* Available at: http://www.secure.cihi.ca/cihiweb/products/WaitingTimesReport_06_e.pdf. Accessed March 16, 2008.
6. Canadian Intergovernmental Conference Secretariat. *A 10-Year Plan to Strengthen Health Care.* Available at: http://www.scics.gc.ca/cinfo04/800042005_e.pdf. Accessed June 06, 2008.
7. Sanmartin C. Toward standard definitions of waiting times. *Healthcare Management Forum* 2006; web release.
8. Andersen R, Newman J. Societal and individual determinants of medical care utilization in the United States. *Milbank Memorial Fund Quarterly* 1973; 51: 95-124.
9. Alter DA, Iron K, Austin PC, et al. Socioeconomic status, service patterns, and perceptions of care among survivors of acute myocardial infarction in Canada. *Journal of the American Medical Association* 2004; 291: 1100-7.
10. Dunlop S, Coyte PC, McIsaac W. Socio-economic status and the utilization of physicians' services: results from the Canadian National Population Health Survey. *Social Science and Medicine* 2000; 51(1): 123-33.
11. Veugelers PJ, Yip AM. Socioeconomic disparities in health care use: Does universal coverage reduce inequalities in health? *Journal of Epidemiology and Community Health* 2003; 57(6): 424-8.
12. Nabalamba A, Millar WJ. Going to the doctor. *Health Reports* (Statistics Canada, Catalogue 82-003) 2007; 18(1): 23-33.
13. Chan B, Austin PC. Patient, physician, and community factors affecting referrals to specialists in Ontario, Canada: a population-based, multi-level modelling approach. *Medical Care* 2003; 41(4): 500-11.
14. Suter LG, Fraenkel L, Holmboe ES. What factors account for referral delays for patients with suspected rheumatoid arthritis? *Arthritis and Rheumatism* 2006; 55(2): 300-5.
15. De Coster C, Fitzgerald A, Cepoiu M. Priority-setting tools for rheumatology disease referrals: a review of the literature. *The Journal of Clinical Rheumatology* 2008; 27(11): 1411-6.
16. Béland Y. Canadian Community Health Survey – Methodological overview. *Health Reports* (Statistics Canada, Catalogue 82-003) 2002; 13(3): 1-14.
17. *Canadian Community Health Survey (CCHS) 2007 Microdata Files User Guide (June 2008).* Available at: http://www.statcan.gc.ca/cgi-bin/af-fdr.cgi?l=eng&loc=http://www.statcan.gc.ca/imdb-bmdi/document/3226_D7_T9_V4-eng.pdf&teng=User%20Guide&tfra=Guide%20de%20l'utilisateur.
18. Rao JNK, Wu CFJ, Yue K. Some recent work on resampling methods for complex surveys. *Survey Methodology* (Statistics Canada, Catalogue 12-001) 1992; 18(2): 209-17.
19. Rust KF, Rao JNK. Variance estimation for complex surveys using replication techniques. *Statistical Methods in Medical Research* 1996; 5: 281-310.
20. Adams A, Buckingham CD, Lindenmeyer A, et al. The influence of patient and doctor gender on diagnosing coronary heart disease. *Sociology of Health & Illness* 2008; 30 (1): 1-18.
21. Arber S, McKinlay J, Adams A, et al. Patient characteristics and inequalities in doctors' diagnostic and management strategies relating to CHD: A video-simulation experiment. *Social Science and Medicine* 2006; 62(1): 103-15.
22. Richards H, McConnachie A, Morrison C, et al. Social and gender variation in the prevalence, presentation and general practitioner provisional diagnosis of chest pain. *Journal of Epidemiology and Community Health* 2000; 54: 714-8.
23. Alter, DA, Basinski ASH, Naylor CD. A survey of provider experiences and perceptions of preferential access to cardiovascular care in Ontario, Canada. *Annals of Internal Medicine* 1998; 129: 567-72.
24. Statistics Canada. *Health Indicators 2008.* Available at: http://www.statcan.gc.ca/daily-quotidien/080618/dq080618a-eng.htm. Accessed June 18, 2008.
25. Rootman I, Gordon-El-Bihbety D. *A Vision for a Health Literate Canada. Report of the Expert Panel on Health Literacy.* Ottawa: Canadian Public Health Association, 2008.
26. Quan H, Fong A, De Coster C, et al. Variation in health services utilization among ethnic populations. *Canadian Medical Association Journal* 2006; 174 (6): 787-90.
27. Ng E, Wilkins R, Gendron F, et al. *Dynamics of Immigrants' Health in Canada: Evidence from the National Population Health Survey* (Statistics Canada, Catalogue 82-618-MWE2005002) Ottawa: Statistics Canada, 2005.
28. Donohoe MT, Kravitz RL, Wheeler DB, et al. Reasons for outpatient referrals from generalists to specialists. *Journal of General Internal Medicine* 1999; 14(5): 281-6.
29. Gandhi TK, Sittig DF, Franklin M, et al. Communication breakdown in the outpatient referral process. *Journal of General Internal Medicine* 2000; 15(6): 626-31.
30. Carrière G. Consultations with doctors and nurses. *Health Reports* (Statistics Canada, Catalogue 82-003) 2005; 16(4): 45-8.